

26 February 1986

MEMORANDUM FOR: Chief, Network Systems Engineering Group, OIT

THROUGH : Chief, Network Systems Division, NSEG/OIT

STAT FROM :  Chief,  
Development & Engineering Branch, NSD/NSEG/OIT

SUBJECT : SyQuest Proposal

Action Requested: Please approve and forward to OL the attached unsolicited proposal from SyQuest for cartridge disk drive subsystems. This action does not require any immediate commitment of funds.

Background: Part of the NEWS project is associated with the development of a new workstation, (3270 PC/AT). These workstations will, in some cases, require additional hard disk storage. Security considerations restrict the use of internal hard disks to vaulted areas. Thus, the logical device to use in meeting the storage requirements is the removable cartridge disk and associated drive.

Until recently two companies made removable Winchester cartridge disk drives. These companies were DMA and SyQuest. In August last year DMA's assets were turned over to its creditors and is no longer in the disk drive business.

Requirements: It is requested that OL establish a requirements contract for the SyQuest removable Winchester cartridge disk drive subsystems. This contract will allow Offices procuring 3270 PC/AT workstations to purchase disk storage as required for their particular applications and workstation configurations.

There are two models of the subsystem which will have utility in the planned workstation environment. Model SQ1010-01 will provide two 10 megabyte cartridge drives for a total of 20 megabytes of storage. The second model, SQ1515-01, provides two 15 megabyte cartridge drives for a total of 30 megabytes of storage.

Both models should be included in the contract. The contract should also include the cartridges. These vary in cost from \$90 to \$100 depending upon quantity.

## Specific requirements:

1. Separate subsystem
2. Removable storage media
3. At least 10 megabytes per cartridge
4. Uses Winchester technology
5. At least three AC power receptacles
6. Compatible with DOS
7. Allows booting from cartridge/disk

Sole Source Vendor: SyQuest Technology, 5 Militia Drive, Lexington MA 02173, 617-862-6410 is the only vendor known to manufacture removable Winchester cartridge disk drives. This market has been under continuous review for other vendors for over a year and no other vendor exists. We had actually evaluated DMA drives as well as SyQuest drives before DMA filed for bankruptcy and found either drive to be technically acceptable.

The survey of the market examined numerous periodicals, journals, and Data Pro. In addition, several conference equipment exhibits were attended in search of possible sources of supply.

STAT



APPROVED:

STAT



Chief, Network Systems Engineering Group



**SyQuest**

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Janaury 13, 1986

Office of Information Technology  
Room 2D02  
Washington, D.C. 20505

Dear Sirs:

SyQuest Technology is submitting this unsolicited proposal for your review and comments. Enclosed please find the design specifications on the SyQuest SQ1010 and SQ1515 subsystems.

These subsystems are random access storage devices consisting of two (2) SyQuest disk drives, a power supply, a SCSI controller, a cooling fan, interface connector, a signal cable and host adaptor. These subsystems are compatible with the IBM PC, XT, AT and 3270.

The following list of comments are presented for clarification purposes to you the potential user:

1. The SQ200 cartridges used in the SQ1010 are not interchangeable with SQ200 cartridges generated on non-subsystem 312RD disk drives.
2. The SQ1010 and SQ1515 cartridges are pre-formatted and will appear defect free to the user. Also, these cartridges are not interchangeable from a SQ1010 to a SQ1515 subsystem.
3. The utility called "HD Prep" is not required for either subsystem cartridge.
4. If any of the compatible IBM PC's contain a hard disk, then the utilities "F Disk" and "Format" are required. These utilities will be provided by SyQuest.

5 Militia Drive  
Lexington, Massachusetts 02173  
617 862-6410

Office of Information Technology  
January 13, 1986  
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Pricing on these subsystems is as follows:

<u>SUBSYSTEM</u>	<u>YEARLY QUANTITY</u>	<u>PRICE</u>
SQ1010	250	\$2295
SQ1515	250	\$2370

NOTE: These subsystems can be mixed and matched to achieve the yearly quantity of 250. Individual purchase orders will be accepted and cumulated to achieve the yearly quantity.

Terms are net 30 days, F.O.B. Fremont, California.

If I can be of any additional assistance regarding this proposal please do not hesitate to call upon me. SyQuest Technology would welcome the opportunity of becoming a supplier to the United States Government.

Sincerely yours,



Len Farrell  
Eastern Regional Sales Manager  
SyQuest Technology

LF:mm

## PRELIMINARY SQ1515 DESIGN SPECIFICATION

Rev. 0.10

December 17, 1985

## 1. INTRODUCTION

## 1.1 General Description

The SQ1515 is a subsystem with random access storage devices consists of two SyQuest drives, power supply, SCSI controller, cooling fan and interface connectors. The subsystem provides the following functions:

1. Random access storage
2. SCSI interface to host system
3. Interchange data cartridges

## 2. System specification

## 2.1 Configuration

Model	Unformatted Capacity
1515-01	2 - SQ317RD 17 Mbytes each
1515-02	1 - SQ317RD 17 Mbytes
	1 - SQ357F 57 Mbytes
1515-03	2 - SQ357F 57 Mbytes each

## 2.2 Environment

## Temperature

Operating	40 F to 115 F
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Non-operating	-40 F to 140 F
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Relative humidity	8 to 80 % non condensing
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## Vibration

Operating	0.048 inch double amplitude (5 -17 Hz) .5 G            17 to 150 Hz
Non-operating	1 G

## Shock

Operating	10 G (11 Ms) any axis half sine wave
Non-operating	20 G (25 Ms) any axis half sine wave

## Noise

Class 3 average 55 db

## FCC

Meets Computer class B  
requirement

## UL, CSA

Recognized

## 2.3 Mechanical Dimensions

Height	2.5 inch
Width	19.0 inch
Length	17.0 inch
Weight	< 15.0 lb.

## 2.4 Power

AC	95 - 130 V	57 - 63 Hz	1 Amp.
or			
	220 - 240 V	47 - 53 Hz	0.5 Amp

## 2.5 System Interface

SCSI with 37 pin D-shell AMP P/N 205292-1 connector

### 3.0 Interface Requirement

#### 3.1 System

IBM PC,XT and AT compatible with Host Adapter used

1. Attached as Resident storage devices - Bootable
2. Attached as Add-on storage devices, co-exist with existing resident storage devices.
3. Automatic error recovery on run-out
4. Manual selection on run-out error recovery
5. Support cartridge change
6. Support PC-DOS function
7. Support FDISK function
8. Subsystem error recovery procedure
  - a. Read/write error retry
  - b. Seek error retry
  - c. Drive not ready retry
  - d. Drive not available handling
  - e. Excessive run-out retry/recovery
9. Back-up support compatible to DOS
10. If the ROM BIOS can not be used, the software device driver should provide the similar features.

#### 3.2 Electrical

##### 1. System

- a. SCSI to Host thorough 37 pin cable
- b. Connector type D-sub 37 AMP P/N 205292, the connector is mounted at rear of the box.

##### 2. Power

- a. One AC inlet and three outlet at rear of the box.
- b. 15 AMP system circuit breaker
- c. One power on switch at right hand side of the box.
- d. One voltage selection switch

#### 3.3 Front Panel

1. One power on indicator
2. Two run-out recovery switch (one per drive) with indicator.

### 3.4 DOS

#### 3.4.1 Resident ROM BIOS

1. Support FDISK, FORMAT
2. Support Back-up program
3. Support all DOS application programs
4. Bootable if one of the drive is the primary storage

#### 3.4.2 Configured Device driver

1. Device FORMAT program
2. Support DOS Back-up program
3. Support all DOS application programs
4. Manual driven install program

### 3.5 Utilities

#### 3.5.1 Primary FORMAT and defect allocation

#### 3.5.2 Diagnostic

### 3.6 Cartridge or Disk

Cartridge or disk used in the subsystem should be primary formatted and error sector de-allocated. User needs to do DOS fixed disk and format procedure before the DOS can access to the drive or cartridge.

There are many version of the DOS available, it is impossible to do the the FDISK and FORMAT function without knowing the DOS configuration.

However, a batch file on a floppy can automate the process.



## PRELIMINARY SQ1010 DESIGN SPECIFICATION

Rev. 0.0

January 7, 1986

## 1. INTRODUCTION

## 1.1 General Description

The SQ1010 is a subsystem with random access storage devices consists of two SyQuest drives, power supply, SCSI controller, cooling fan and interface connectors. The subsystem provides the following functions:

1. Random access storage
2. SCSI interface to host system
3. Interchange data cartridges

## 2. System specification

## 2.1 Configuration

Model	Unformatted Capacity
1010-01	2 - SQ312RD 12 Mbytes each
1010-02	1 - SQ312RD 12 Mbytes
	1 - SQ338F 38 Mbytes
1010-03	2 - SQ338F 38 Mbytes each

## 2.2 Environment

## Temperature

Operating	40 F to 115 F
-----------	---------------

Non-operating	-40 F to 140 F
---------------	----------------

Relative humidity	8 to 80 % non condensing
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## Vibration

Operating	0.048 inch double amplitude (5 -17 Hz) .5 G                    17 to 150 Hz
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220 - 240 V      47 - 53 Hz      0.5 Amp

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